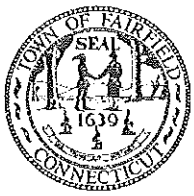
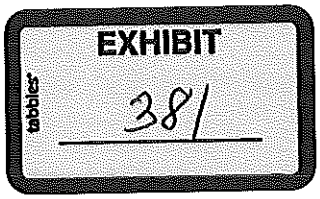




Town of Fairfield

Thomas J. Steinke
Director

Fairfield, Connecticut 06824
Conservation Commission
The Wetlands Agency

Sullivan Independence Hall
725 Old Post Road
(203) 256-3071
FAX (203) 256-3123

February 3, 2010

Commissioner A. Marella
c/o Paul Stacey
Department of Environmental Protection
79 Elm Street
Hartford, CT 06106

Re: Comment on proposed Connecticut Streamflow Standards and Regulations (Regulations of Connecticut State Agencies sections 26-141b-1 to 26-141b-9, inclusive)

Dear Commissioner Marella:

This letter with recommendations is based on the Fairfield Conservation Commission's review of the existing and proposed streamflow regulations as enabled by P.A. 05-142, on staff reports from DEP informational meetings and public hearing on the proposed regulations, on a review of the legislative history of P.A. 05-142, and the decades of experience the commission has acquired in its efforts to advance the goals of the proposed streamflow regulations. This letter summarizes the Conservation Commission's understanding of the proposed regulations and recommends improvements in the state's regulatory efforts to incorporate the water-based needs of river and stream ecosystems in the allocation of in-stream water resources among many legitimate competing users, such as water supply, public health and safety, industry, agriculture, and recreation.

The subject of new minimum streamflow regulations is important to Fairfield because it will affect whether and to what degree that necessary and sufficient water will be present in Connecticut's rivers and streams to meet the needs of the riverine ecosystem while providing for the requirements of human activities that divert, impound, or otherwise alter the flow of water in its rivers and streams. The regulations will affect well withdrawals from adjacent groundwater stratified drift aquifers; water release from a dam, which release will also affect water quality since every watershed in Fairfield has an existing or proposed TMDL restriction due to existing impaired water quality. Fairfield's rivers and streams have mainstem dams and diversions; contested permit applications related to diversion of water; as well as related state trout management areas and anadromous fish runs:

River Basins in Fairfield:

1. Ash Creek/Rooster River/Horse Tavern Brook with the Canoe Brook Lake Dam (old BHC reservoir) in Trumbull (no known existing anadromous fish runs)
2. Mill River with the Aquarion Water Company's Easton Reservoir Dam and the town's Lake Mohegan Dam both included in the Mill River Trout Management Area; Aquarion's Morehouse Brook Diversion; Aquarion's Hemlocks Reservoir Dam on Cricker Brook; the Lake Hills Association's Samp Mortar Lake Dam (old BHC reservoir); Aquarion's Brookside Drive Well Field (presently inactive) in the Mill Plain stratified drift aquifer; the Tide Mill Dam at Harbor Road; and the Perry Mill Open Space anadromous fish ladder with anadromous fish runs in Mill River up to the base of the Samp Mortar Lake Dam. The Conservation Commission and Aquarion Water Company recently concluded frank discussions and an agreement on the Ridgefield diversion application resulting in the increased release of water to Mill River during the summer low-flow period, and we are about to reconvene meetings regarding the release of water from Aquarion's Morehouse Brook Diversion.
3. Sasco Brook with the Patterson Club golf course irrigation wells along the channel; and the several private low-head dams downstream, with anadromous fish runs up to the base of the Bulkley Dam.
4. Aspetuck River with Aquarion's Aspetuck Reservoir Dam and many private low-head dams with Aquarion's well field downstream in the stratified drift aquifer; with anadromous fish ladders under construction and their migratory fish runs progressing further upstream each year.

All of these river systems are included in the Conservation Commission's plans for extending anadromous fish runs to their historic habitat limits in their respective watersheds. All of these river systems have segments that are impaired due to poor water quality and fail to meet the federal Clean Water Act standards and so the state DEP continues to impose stormwater and TMDL regulations on Fairfield and adjacent municipalities to reduce pollution sources and restore required water quality, which water quality is a function of the amount of water flowing in the channel at any given time.

Fairfield's river dams that intercept the natural flow of water, whether or not they impound, divert, or otherwise affect the flow of water in the river or stream, impose significant adverse effects on the downstream and upstream characteristics and reaches of the river system. These occur by back-flooding and destroying the habitat of natural plant and animal communities upstream; by modifying water chemistry, temperature, and dissolved oxygen concentrations affecting organisms both up- and down-stream; by intercepting, from the upstream watershed, and retaining transported mineral and organic matter, and energy, that is sequestered in bottom sediments or filtered out behind the dam instead of contributing to the riverine ecosystem downstream. Diversions serve to direct water out of the channel thereby reducing the physical and biological potential for water flow to provide the year-round seasonal variation of habitat conditions required for viable riverine plant and animal communities. The over-pumping and withdrawal of water from stratified drift aquifers adjacent to the river or stream serves to reduce or eliminate stream flow leading to the destruction of habitat and aquatic organisms; also, the

reduced volume of river water downstream of the dam-as-diversion contributes to impaired water quality through concentration of pollutants. Further, the dams, whether they divert, impound, or otherwise affect the flow of water, physically obstruct the natural movement of, and thereby eliminate, the fish species that have historically migrated up-stream and –down, such as anadromous fish species, e.g., river herring, that live as adults in the ocean and migrate up coastal rivers to spawn in the headwaters of local watersheds. These anadromous or migratory species are synergistic components of the riverine ecosystem as they integrate over the variables of water quality, seasonal water quantity, adult spawning and juvenile habitat. The proposed regulations, as they affect the release of water, merely provide the habitat conditions of flow supportive of aquatic plant and animal communities whether or not those species are present, suggesting that by mechanically providing the parts the system will work and achieve the purposes of P.A. 05-142; but there is more to it than that. The anadromous species energize or animate the river system, making it far greater than the sum of its individual parts and thereby through their presence, also serve as a direct indicator or monitor of how well the public purposes of the legislation is being achieved over time.

Background

According to testimony provided during the Legislature's hearings on Senate Bill No. 1294 concerning the minimum water flow regulations, the existing state minimum stream flow regulations have no basis in science, they only apply to those state streams that are stocked with fish by the state, and according to DEP Commissioner McCarthy in her testimony to the Legislature's Environment Committee on March 21, 2005, "the stream flow regulations that are currently in effect ...[are] insufficient to adequately maintain aquatic life". In light of these deficiencies, P.A. 05-142 An Act Concerning the Minimum Water Flow Regulations, upon which the DEP's proposed streamflow regulations are based, essentially created a new water user or stakeholder category resulting in a new variable in the equation affecting the allocation of finite water resources in Connecticut. The Legislature enacted P.A. 05-142 after several decades of confusion and frustration by state agencies and interested parties with the complex, protracted and expensive delays of working with the existing inadequate regulations when trying to address the needs of water use for human activities and the need for protecting the seasonally variable ecological attributes of water flowage in Connecticut's perennial rivers and streams.

Public Act 05-142

Proponents of the legislation, including water companies, industry, power, agriculture, recreation, and environmental and conservation interests, sought to achieve regulations that were based on the best available science, that applied to all perennial rivers and streams in the state, that included all existing lawful users of water as well as that of natural aquatic life, that reflected the unique hydrogeological characteristics, land use and development conditions, and conservation requirements of rivers and streams in individual drainage basins. These goals were achieved in PA 05-142 by providing for the regulation of "...any dam or other structure [that] is maintained in this state which impounds, or diverts, the waters of a river or stream or which dam or other structure affects the flow of water in such river or stream,..."

The Act requires the DEP streamflow regulations to consider the needs and requirements of eleven categories of users (from water supply and flood control to river and stream ecology and

natural aquatic life); it requires that the stream flow regulations shall apply to all state rivers and streams; preserve and protect natural aquatic life including anadromous fish; natural and stocked wildlife; promote and protect water for public recreation; and be based on natural variation of flows and water levels; while providing for the needs and requirements of the eight pre-existing water user categories; and be based on the best available science citing nine subject areas and sources of data. The Act enables the DEP regulations to be deliberative in providing for Special Conditions and Exemptions where extreme economic hardship or other circumstance exists, including agricultural diversions, federal water quality certifications, or as necessary to allow public water systems to comply with applicable regulations, and it specifically exempts any flow management plan contained in a court settlement or agreement (reflecting the Shepaug River CEPA action court agreement with the City of Waterbury). The Act specifies that any person or municipality (the Legislature specifically intended for the Act to include municipally-owned dams) that maintains a dam or structure impounding or diverting water within the state shall be compliant with the regulations. Violations will be addressed by the DEP and Attorney General.

The Proposed Regulations Based on PA 05-142

Section 26-141b-2, Definitions, the proposed regulations incorporate and define forty selected terms used in the text of the regulations, but do not include several important terms that require definition as noted below.

Section 26-141b-3, Applicability, the regulations state that they apply to any person owning or operating a dam or other structure that impounds or diverts the waters of a river or stream or that affects the flow of water in such a system and then Exempts twenty categories of activities:

1. 10 exemptions related to water diversions (#3,6,9,10,11,12,13,14,15,16)
2. 2 exemptions related to stormwater detention basins (#5,17)
3. 1 exemption each to hydroelectric power (#1), wells (7), flood control dams (4), water withdrawals <50Kgals/day (8), inspection and repairs (2), run-of-river dams (18), drainage areas $\leq$ 3 sq. miles with release of water at a rate of 0.1 cu. ft. per second per sq. mile of drainage area (cfsm) (19), and chained dam systems w/in one mile of each other and releasing water at a rate of 0.1 cfsm.

Sec. 26-141b-4, Narrative Standards, The regulations describe the characteristics of three out of four classifications of river or stream segments with respect to depth, volume, and velocity with sufficient variation of flows and water levels needed to support habitat conditions for an aquatic biological community which classifications are influenced by the degree of disturbance or ecological alteration resulting from human activities. The regulations then reference a fourth classification whose descriptors provide no guidance concerning desirable minimum water flow depth, volume, velocity, or seasonal variation of flows or water levels. It appears as if the Class 4 classification is for an unregulated category of rivers or streams, which, if true, would be inconsistent with P.A. 05-142.

Sec. 26-141b-5, Adoption of river or stream system classifications. The regulations require the mapping of the state's river and stream segments in four classifications which are to be based on thirteen categories or variables which include the size and location of diversions and impoundments, existing and proposed land use and water supply plans, data on the distribution and abundance of plant and animal species, the presence or planning for anadromous fish runs, and the practicality and potential for restoring stream flow patterns in light of channel and watershed development. Public participation in the stream segment mapping and classification

efforts is provided for through comment periods as well as procedures and criteria for petitioning changes to the stream segment classifications.

Sec. 26-141b-6, Presumptive Standards. The regulations describe how, over a period of six months to ten years "after the first effective date of classification" (a process having a time period anticipated to be five years in mapping duration with a total compliance period approximating fifteen years), dam owners or operators shall operate their dams so as to release specific quantities of water for specific classifications of river and stream segments. These releases vary from the operation of a dam as a run-of-river dam in Class 1 within six months of classification; release of 75 % of natural inflow in Class 2 within five years of classification; release of water according to minimum specified flows varying by specific seasons or bioperiods within five and ten years of classification in Class 3 stream segments; and release 0.1cfsm or the minimum stream flow required pursuant to the Regulations of Connecticut State Agencies Sec. 26-141a-1 to –8 within five and ten years of classification in Class 4 river segments. Provision is made for reducing the water releases in step-wise decrements in response to drought and other emergencies in order to protect potable water supplies. Procedures and criteria are provided for evaluating variances to reduce the minimum release required if requested by state officials or the owner or operator of any dam. The compliance process taking upwards of fifteen years serves to accommodate the needs of the regulated community to adapt to the regulatory requirements and thereby avoid an extreme economic hardship as intended in the Act. Most new regulations can be configured to avoid such hardship by providing the dam owner or operator with sufficient time to factor the associated changes into its business plan or other long-term planning document.

Section 26-141b-7. Flow Management Compacts. The regulations provide procedures and criteria and public review and comment opportunities for the development of flow management compacts that may be approved provided that they meet the narrative standards of the regulations.

Section 26-141b-8. Record keeping and reporting requirements. The regulations articulate the required information, format, and record retention periods for data that the dam owner or operator must submit to the state.

As a result of P.A. 05-142 introducing the riverine ecosystem as a new competing variable in the water allocation equation, recent public hearing testimony on the proposed regulations found the pre-existing stakeholders citing their support for the generic goals of the legislation, but expressing opposition to the proposed regulations intended to achieve the goals. Of sixty-nine speakers providing testimony there were representatives of investor-owned and publicly-owned water supply systems, golf courses, agriculture, business and economic development, tourism, and environmental and conservation interests. The majority of those in opposition (27 speakers affiliated with water supply interests) stated that the proposed change in water allocation would mean a reduction of access to water supplies in the locations, at the times, in the quantities, and at the fee schedule desired, and this change will require new personnel, operating, and capital investment costs; and will require development of new sources of supply, new protocols for conservation and reuse of water and adaptation of business plans and water ratepayer fee structures to reflect the new water allocations for competing water users. Opponents (43) collectively asserted that they were at a legal and financial disadvantage in understanding the ramifications of the proposed regulations because the economic and operational impacts of the

proposed regulations on their interests could not be appreciated until the required river flow releases were defined, and that could not be accomplished until the river and stream segments downstream of their dams and other structures had been classified, and that could not be completed until after the regulations were adopted. Opponents cited the inequity of the regulations that represented costly regulation to the dam owners and operators who diverted water flow, with no commensurate increase in water supply or service to their customers, and no costs to those other dam owners and the public who benefited from flow releases but had no responsibility to bear the costs for the benefits received; objection was also expressed for the use of generic flow release formulas that reflected bioperiods for unique fish species (e.g., clupeids, i.e., anadromous or migratory fish such as alewives or river, that currently do not exist within, and could not access (because of the physical barrier of dams in the lower river segments) the higher value river segments above the dams for which absent anadromous species intercepted water must still be released by the dam owner or operator.

Those speakers who endorsed the proposed minimum streamflow regulations (26) noted that they were based on the best available science as required by P.A. 05-142; were supportive of employment and economic growth; were long overdue and asked that the regulations be adopted now and be improved over time, and encouraged the DEP to revise them so as to provide the regulated community with additional time for achieving compliance where and when required so as to avoid extreme hardship. Notably, a consistent recommendation made was that the Class 4 river segment classification (having the most disturbance due to human activities and therefore assumed to be of the lowest importance with respect to needed flows and water levels) either be eliminated or be revised so as to ensure that water quantity, quality, and seasonal variability of flow rates in Class 4 waters support public water-based recreation as well as enable the anadromous species to migrate through the higher and lower classifications of all accessible river segments.

Conclusions and Recommendations

The proposed streamflow regulations are incomplete in that they do not achieve the legislative intent of integrating over time and space the allocation of the state's in-stream water resources among multiple competing interests and the owners of dams or other structures which impound, divert or affect the flow of water in the rivers and stream of the state. Of the three effects, functions or purposes that dams or other structures may have, i.e., impound, divert, or affect the flow of water as articulated by P.A. 05-142, An Act Concerning the Minimum Water Flow Regulations, the proposed regulations only emphasize one function – diversions. The absence of regulatory elements addressing the other two effects of dams and other structures, i.e., impoundments, and those that affect the flow of water, fails to integrate and regulate the minimum flow of water necessary to achieve the multiple-use purposes of the Act.

The proposed regulations do not reflect the legislative intent to integrate riverine ecology and the variables of flow rate and depth, with dams, diversions and impoundments over time and space. By exempting all estuarine dams and run-of-river dams from the requirements for the constructive release of water, the proposed regulations do not provide for water flows necessary to accommodate the anadromous fish species specifically described in P.A. 05-142, Section 2.

(2) for which the "flow regulation shall preserve and protect the natural aquatic life, including anadromous fish contained within such waters".

These deficiencies may be corrected by revising the proposed regulations to include language requiring the connection of independent river and stream segment classes separated by dams and other structures in a synergistic system by providing for the accommodation of anadromous species that integrate across all variables of river segment, habitat, and regulatory water releases.

1. Explain why the class of fish species described in PA 05-142 as "anadromous" is not used in describing the bioperiods for water release.
2. Explain how the use of the terms "clupeid spawning bioperiod" and "salmonid spawning bioperiod" meet the intent of the Legislature's use of the term "anadromous".
3. Include a definition of the term "impound/impounds/impoundment" as used in these proposed regulations (e.g., Sec. 26-141b-3 Exemptions). so that it is compatible with its use in P.A. 05-142.
4. Define the class of things or activities, other than diversions and impoundments, that "affect the flow of water" as used in PA 05-142 and Sec. 26-141b-3. (b) of these proposed regulations.
5. a. Revise Sec 26-141b-3. (c)(18) Applicability, Exemptions, to remove, from tidewaters to headwaters, operation of run-of-river dams as an exempted activity. A run-of-river dam is a dam or other structure that may not divert or impound, but otherwise affects the flow of water in a river system and these three consequences or conditions resulting from dams are so stated to be regulated in PA 05-142. If this class of dams is to include exemptions then provide for the dam operator or owner to apply for such exemption, and articulate the deliberative criteria that are intended to demonstrate an extreme economic hardship or other circumstance for which an exemption may be approved. The Legislature specifically provided for Special Conditions and Exemptions and exempted only water management plans accepted in settlement of court actions; and in all other categories it used the term "may", not "shall", when acknowledging the inclusion of extreme economic hardship or other circumstance, agricultural diversion, water quality FERC permits, or a public water system to comply with its system obligations. The Legislature clearly articulated its intent for Special Conditions and Exemptions to be imposed or granted after due deliberation – not as wholesale classes without demonstration of need or articulation of purpose served or legislative intent achieved by the exemption.

   b. Explain how the categories of exemptions were established; what deliberative process was used in selecting them; which of the Act's potential categories of "exemptions" were used to support the proposed classes of exemptions. Explain why there are no proposed Special Conditions as provided by the Act under which certain activities could be regulated and managed, such as run-of-river dams, without exempting them from all regulations and without creating an extreme economic hardship condition.

6. Revise Sec. 26-141b-4.(d).Narrative Standards, by adding the text ; and further recognizing and providing for stream and river ecology, the requirements of natural aquatic life, natural wildlife, and public recreation so that a Class 4 classification water release shall serve to provide, ensure and enhance the river or stream segment's seasonal ability to support the habitat and populations of anadromous species on their spawning and return migrations.
7. Revise Sec. 26-141b-5.(a) (7). Adoption of river or stream system classifications, by adding the text; or where anadromous fish runs have been documented in the historical past, or where anadromous fish spawning habitat exists and anadromous fish could reasonably be expected to be present were it not for the presence of the dam or other structure.
8. Revise Sec. 26-141b-6.(2) (C) and Sec. 26-141b-6.(3) (B), and add a new Sec. 26-141b-6.(b)(2) as subsection (D), Presumptive standards, to provide language for a release of water into Class 4 river segments so as to at least support the seasonal stream flows and depths required for adult anadromous fish species to successfully migrate upstream and for juvenile fish to return to tidewater. Such streamflow might be achieved through the limited duration of a fractional water release proportionate to that specified in the limited seasonal spawning bioperiods specified for Class 3 river segments.
9. Revise Sec. 26-141b-6 (b) (3) and (4) to be compatible with the above revisions relative to Sec. 26-141b-6.(2)(C)., (3)(B), and added (3)(D).
10. Revise Sec. 26-141b-6 by adding new section (f) Special Conditions:
    (1) After achieving full compliance with these regulations subsequent to the first effective date of these regulations and upon a determination by the Commissioner of the Department of Environmental Protection that pre-spawned adult anadromous species are present downstream of a dam or other structure that physically prevents anadromous fish passage and that suitable spawning habitat is present upstream of the dam where anadromous fish have been demonstrated to exist in the historical past prior to the dam's construction, the commissioner shall inform the owner or operator of the dam or other structure which is serving to obstruct the passage of anadromous fish, that the owner or operator shall have a period of time equal to one (1) year, or other suitable time period, for each one (1) foot of height of the structure within which to design, obtain applicable permits, obtain funding, construct, operate, and maintain a means of fish passage around the dam or other structure, including, but not limited to, full or partial breaching of the dam, a fish lift, fish ladder, or other suitable method of fish passage until further notice or for as long a time period as such dam or other structure exists.
    (2) If such dam or other structure is determined to be incapable of such breaching or modification to provide alternative anadromous fish passage without creating an extreme economic hardship or other circumstance, the dam owner or operator shall be responsible for funding alternative fish passage mitigation activities within the water basin at a level of funding that does not constitute an extreme economic hardship.
    (3) To facilitate compliance with this section, Sec. 26-141b-6.(F), Special Conditions, by the owner or operator of the dam or other structure, and to reflect the public interest in and the state's commitment to achieving the purposes of P.A. 95-142 and these regulations, the Commissioner of the Department of Environmental Protection shall make all reasonable efforts to assist the dam owner or operator in obtaining funding for such

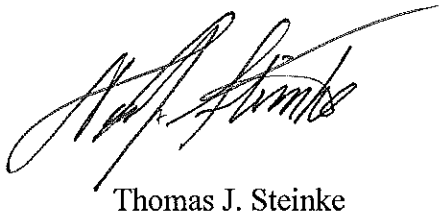
passage of anadromous species through grants, low -interest loans, in-kind services, or by other available means.

11. Explain how the proposed Class 4 classification of river and stream segments will implement the legislative intent and requirements for the regulations as articulated in P.A. 05-142.

In light of the potential significance of these recommended changes to the public, especially with respect to Class 4 classifications, exemptions, and special conditions, consideration should be given to holding a new public hearing on the proposed regulations.

Please do not hesitate to ask if the commission may be of further assistance in support of the proposed regulations.

Sincerely yours,



Thomas J. Steinke

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cc: K. Flatto, First Selectman
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